SUBJECT: Trip Report: Meeting at MSC on Corollary Experiments for the AS-209 Orbital Workshop Case 218

DATE: August 9, 1966

FROM: H. A. Watson

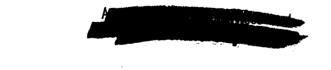
ABSTRACT

On July 22, 1966 MSC and MSFC commenced an effort to define a set of corollary experiments for the AS-209 orbital workshop. The objective is to submit a complete package to the September meeting of the MSFEB for approval.

(NASA-CR-152881) TRIP REPORT: MEETING AT MSC ON COROLLARY EXPERIMENTS FOR THE AS-209 ORBITAL WORKSHOP (Bellcomm, Inc.) 10 P

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on Corollary Experiments for the

AS-209 Orbital Workshop

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MEMORANDUM FOR FILE

On July 22, 1966 representatives of MSC and MFSC met at Houston to consider corollary experiments for the AS-209 orbital workshop. Mr. R. O. Piland of the Experiments Project Office at MSC chaired the meeting. Other principals present were Mr. Robert F. Thompson, deputy director of the newly established SAA Project Office at MSC, Mr. Stanley R. Reinartz, his counterpart at MSFC, and Mr. William A. Ferguson, who is responsible for the orbital workshop at MSFC.

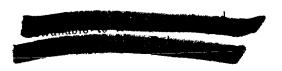
Mr. Piland stated that the joint MSC/MSFC objective was to come up with a complete package of experiments to submit to the September meeting of the Manned Space Flight Experiment Board for approval for flying on the first SAA mission, AS-209. The current meeting was a working session to consider how to meet this objective.

Mr. Rene Berglund of MSC began with a presentation of the proposed airlock module configuration. Copies of the Vu-Graphs used in his presentation are available from the author.

Representatives from MSFC and MSC described the experiments which have been proposed by their respective centers for the flight. A summary of these experiments, with selected information concerning them, is attached.

Mr. Piland grouped these experiments into six categories, with an approximate order of priority as follows:

- a) suitability/habitability
- b) crew effects
- c) simulation of lunar environment
- d) vehicle assembly and maintenance
- e) advanced engineering
- f) evaluation of environmental effects



Mr. Piland proposed that MSC and MSFC do a rough feasibility analysis of the experiments for AS-209, compiling total requirements and comparing these with the capability of the CSM/S-IVB/Airlock Module configuration. The areas in which total requirements must be examined against capability are as follows:

- a) weight
- b) peak power
- c) astronaut time
- d) size
- e) attitude control
- f) EVA time and number
- g) airlock cycles
- h) return payload
- i) PLSS recharges

A joint MSC/MSFC working group was appointed to study the problem.

Mr. Thompson stated that MSC and MSFC should come up with a proposed set of mission objectives in terms of experiments and a proposed profile, which could be staffed through Center Management and up to Headquarters and the MSFEB as a complete package.

Mr. Piland asked for a meeting at MSFC in two weeks to review the progress of the working group and their schedule for submitting a complete package to the September meeting of the MSFEB.

Several observations may be made concerning the problem of selecting experiments for AS-209, as follows:

a) The total weight of the experiments attached is about 600 lbs in excess of the 1500 lbs allowed by MSC for experiment payload.

b) The visit of the 210 CSM to the 209 S-IVB should be considered as a major experiment in competition with those proposed for AS-209, since the propellant required to place the 209 S-IVB in an orbit of sufficient lifetime for revisit by the 210 CSM may have to come out of the experiment payload budget.

c) Any spinning of the spacecraft to create an artificial gravity environment will interfere with the cardiovascular experiment. In order to provide the maximum period for the cardiovascular experiment, the spin-up should be done either very early or very late in the mission. As an interim ruling, it was agreed that the artificial gravity experiment would be performed last.

d) Of the six experiments proposed for AS-209 by the Air Force at the July meeting of the MSFEB, four are similar to experiments on the attached list. The other two are new experiments, one being expandable airlock technology and the other being preprototype encapsulation and recovery of space objects.

ORIGINAL SIGNED BY

1013-HWA-rpk

H. A. Watson

Attachments

Copy to

Messrs.

- E. P. Andrews NASA/MLA
- E. S. Burcher NASA/MTX
 J. H. Disher NASA/MLD
- J. P. Field, Jr. NASA/MLP
- W. D. Green, Jr. NASA/MLA
- T. E. Hanes NASA/MLA
 T. A. Keegan NASA/MA-2
- D. R. Lord NASA/MTX
- J. G. Lundholm NASA/MLA
- W. B. Taylor NASA/MLA
- G. M. Anderson
- D. R. Hagner
- P. L. Havenstein J. A. Hornbeck
- B. T. Howard
- D. B. James
- K. E. Martersteck
- J. Z. Menard
- I. D. Nehama
- G. T. Orrok
- I. M. Ross
- T. H. Thompson
- R. L. Wagner
- All Members Div. 101

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Department 1023

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MSC PROPOSED EXPERIMENT STATUS FOR S-IVB SPENT STAGE AS-209

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MSFC PROPOSED EXPERIMENT STATUS FOR S-IVB SPENT STAGE AS-209

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